



Low Noise Amplifier 2.7GHz~4.0GHz

Features

- Gain: 29dB Typical
- Noise Figure: 0.6dB Typical
- P1dB Output Power: +13dB m full band
- Supply Voltage: +10V @ 125mA
- 50 Ohm Matched Input / Output
- Size: 0.85x 0.41" x 0.31"

Typical Applications

- Wireless Infrastructure
- RF Microwave & VSAT
- Military & Aerospace
- Test Instrument
- Fiber Optics



Electrical Specifications, TA = +25 ° C, Vcc = +10V, 50 Ohm System

Parameter	Min.	Typ.	Max.	Typ.	Max.	Units
Frequency Range	2.70		3.10		4.00	GHz
Gain	28.00	28.50	29.00	27.20	26.00	dB
Gain Flatness		±0.7	±1.0	±0.7	±1.0	dB
Gain Variation Over Temperature (-45 ~ +85)		±1.0		±1.0		dB
Noise Figure		0.58	0.65	0.55	0.60	dB
Input VSWR		1.35	1.37	1.35	1.37	:1
Output VSWR		2.50	2.60	2.50	2.60	:1
Output Power for 1 dB Compression (P1dB)	8.50	9.00		8.00	9.00	dBm
Saturated Output Power (Psat)		13.00		11.00		dBm
Output Third Order Intercept (IP3)		17.00		17.00		dBm
Supply Current (Idd) (Vcc=+10V)		44.00		44.00		mA
Isolation S12		-50.00		-50.00		dB
Input Max Power(no damage)			30.00			dBm
Weight	0.95					ounces
Impedance	50.00					Ohms
Input /Output Connector	SMA-Female					
Finishing	Gold Plating					
Material	Aluminum					
Package Sealing	Hermetically Seal (laser welded sealed)					



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Absolute Maximum Ratings

Operating Voltage	+12V
RF Input Power	+33dB m
Operating Temperature(C°)	-45 to +85
Storage Temperature(C°)	-55 to +125

Biasing Up Procedure

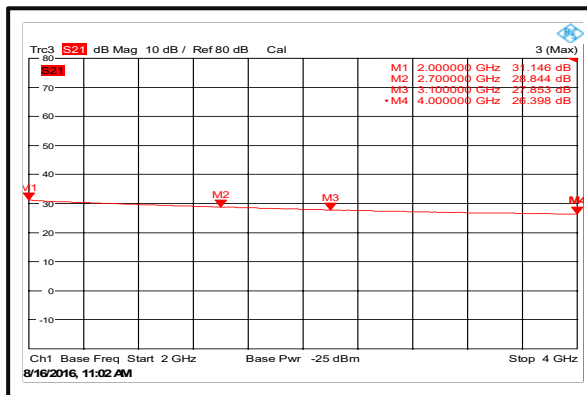
Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +10V biasing
Power OFF Procedure	
Step 1	Turn off +10V biasing
Step 2	Remove RF connection
Step 3	Remove Ground.

Environment specifications

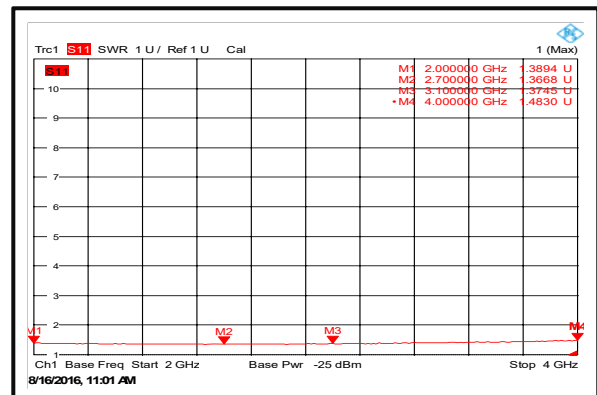
Operational Temperature (C°)	-45 to +85
Storage Temperature (C°)	-55 to +125
Altitude	30,000 ft. (Epoxy Seal Controlled environment) 60,000 ft 1.0psi min (Hermetically Seal Un-controlled environment) (Optional)
Vibration	25g rms (15 degree 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35c, 95%RH at 40°c
Shock	20G for 11msc half sin wave,3 axis both directions

Typical performance plots

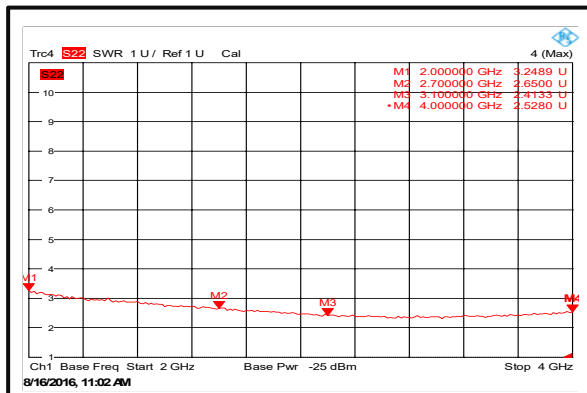
Gain



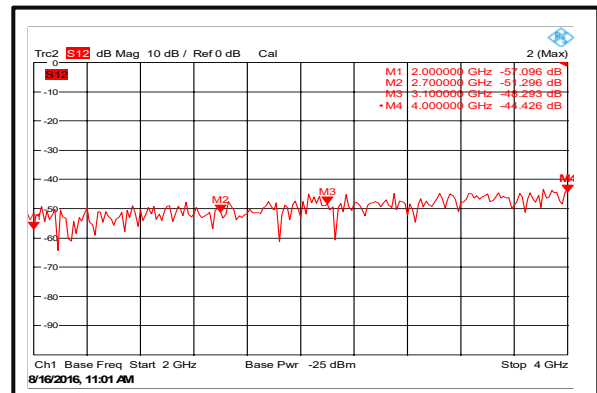
Input VSWR



Output VSWR



Isolation



Ultra Low Noise Figure Amplifier 2.7GHz~4.0GHz

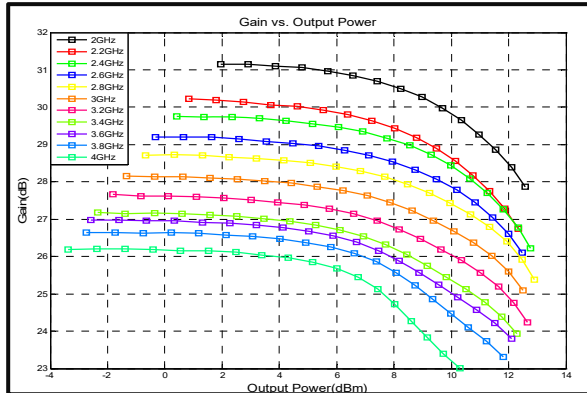


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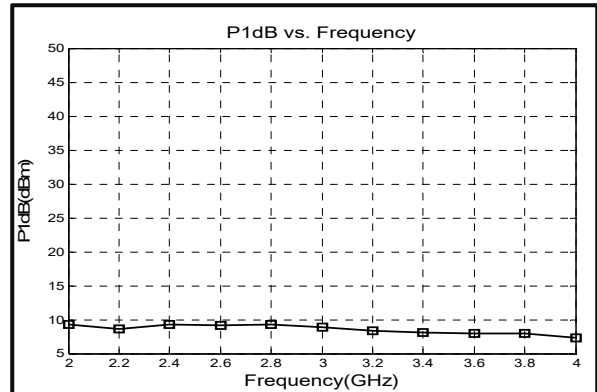
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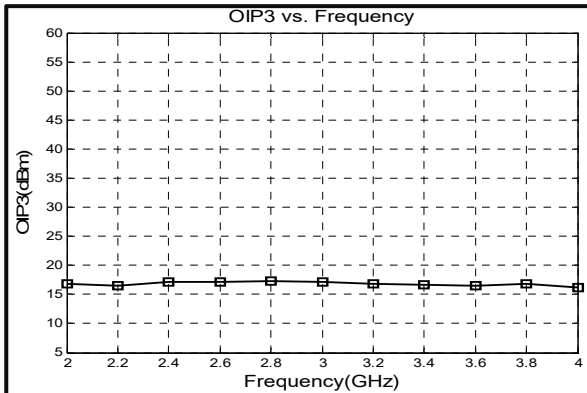
Cain vs. output power



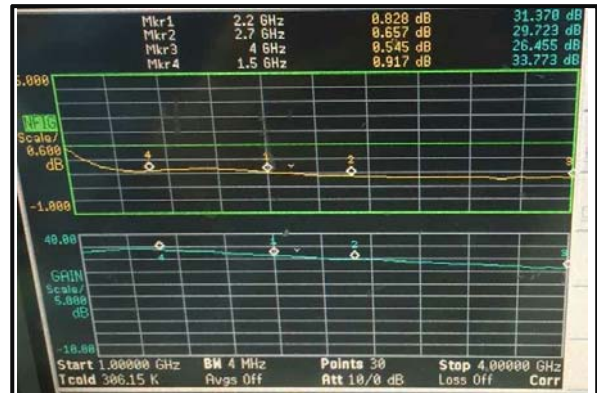
P1dB vs. Frequency



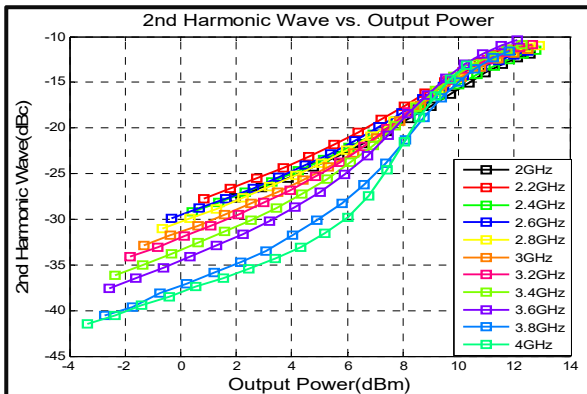
Output Third Order Intercept (IP3)



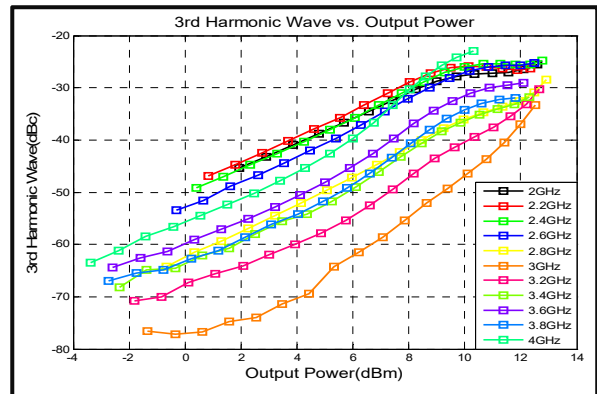
Noise Figure



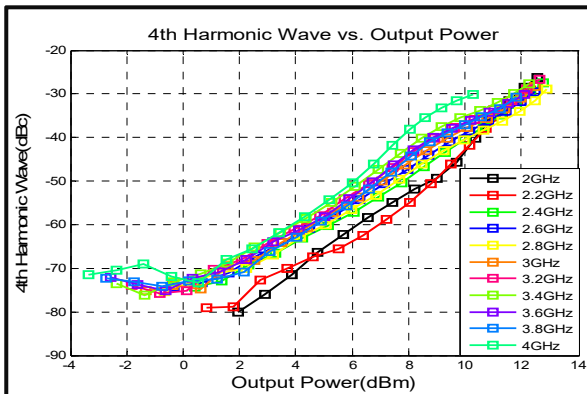
2nd Harmonic Wave output Power



3rd Harmonic Wave output Power



4th Harmonic Wave output Power



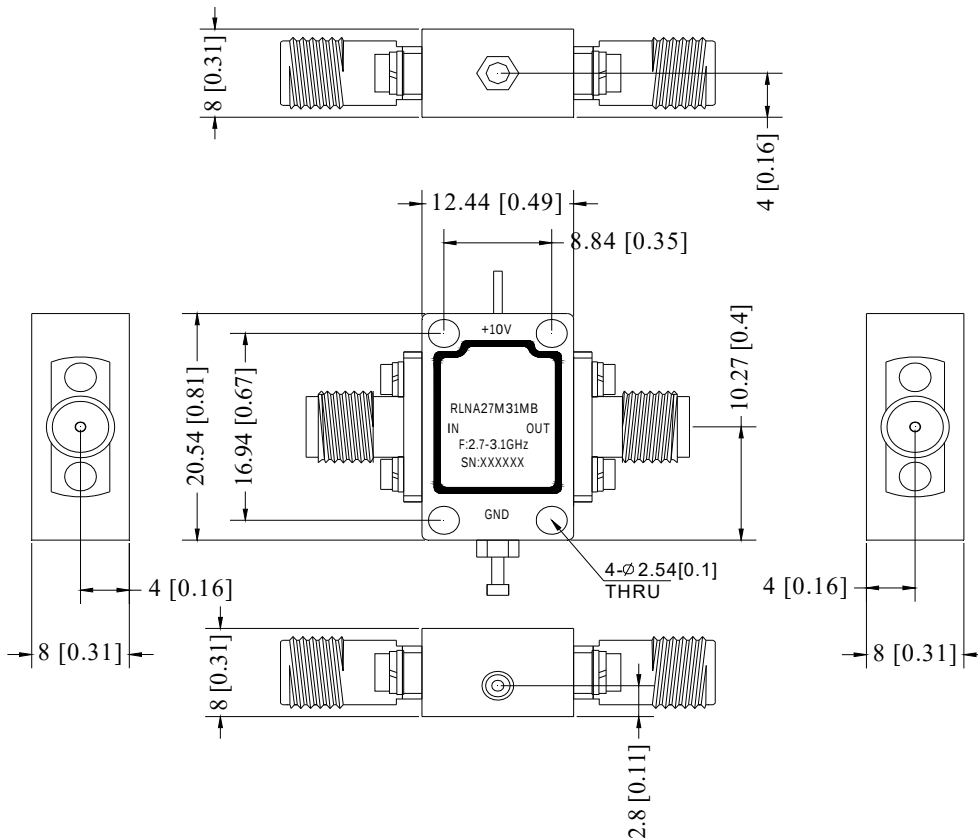
Ultra Low Noise Figure Amplifier 2.7GHz~4.0GHz



Outline Drawing:

All Dimensions in mm (inches)

Heat Sink required during operation (Sold Separately)



Ordering Information

Part No	ECCN	Description
RLNA27M31MB	EAR99	2.7-3.1GHz Low Noise Amplifier

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